

## **5.4 Cultural Resources**

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## 5.4 CULTURAL RESOURCES

The purpose of this section is to determine if cultural resources (including prehistoric, historic, and paleontological resources) occur within and around the project site and to assess the significance of such resources. Mitigation measures are recommended to minimize impacts to cultural resources as a result of project implementation. The information in this section is based on the following documentation:

- *Cultural Resources Survey Report for the Department of Water and Power Specific Plan Project* (Cultural Resources Survey), prepared by SWCA Environmental Consultants, dated September 2011; refer to [Appendix 11.4](#), *Cultural Resources Survey/Paleontological Resources Assessment Reports*; and
- *Paleontological Resources Assessment Report for the Department of Water and Power Specific Plan Project* (Paleontological Resources Assessment), prepared by SWCA Environmental Consultants, dated June 2011; refer to [Appendix 11.4](#), *Cultural Resources Survey/Paleontological Resources Assessment Reports*.

### 5.4.1 EXISTING SETTING

#### PREHISTORIC OVERVIEW

##### **Early Man Period/San Dieguito/Paleo-Coastal (ca. 10,000 to 6000 B.C.)**

In what is now Orange County, there are sites dating from 9,000 to 10,000 years ago. Recent data from coastal as well as inland sites during this period indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas and on Pleistocene lakeshores in eastern San Diego County. A Paleo-Coastal Tradition was proposed and recently referenced to highlight the distinctive marine and littoral focus identified within the southern California coastal archaeological record prior to the emergence of the Encinitas Tradition during the succeeding Milling Stone period. At coastal sites, there is abundant evidence that marine resources such as fish, marine mammals, and shellfish were exploited during the Paleo-Coastal period.

At near-coastal and inland sites, it appears that an emphasis on hunting may have been greater during the Early Man period than in later periods, although few Clovis-like or Folsom-like fluted points have been found in southern California. Common elements in many San Dieguito Tradition sites include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents. Use of the atlatl (spear-throwing stick) during this period facilitated launching spears with greater power and distance. Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted for about 3,000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

##### **Milling Stone Period (ca. 6000 to 3000/1000 B.C.)**

The Milling Stone period and Encinitas Tradition are characterized by an ecological adaptation to collecting, and by the dominance of the principal ground stone implements generally associated with

the horizontal motion of grinding small seeds; namely, milling stones (metates, slabs) and hand stones (manos, mullers), which are often intentionally shaped. Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Milling Stone period sites are common in the southern California coastal region between Santa Barbara and San Diego, and at many inland locations including the Prado Basin in western Riverside County and the Pauma Valley in northeastern San Diego County. Several key coastal sites were relied on to characterize the Milling Stone period and Encinitas Tradition. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and at La Jolla in San Diego County. The Encinitas Tradition was proposed to extend southward into San Diego County where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara– Ventura County region beginning around 3000 B.C. Of the numerous Milling Stone period sites identified in the region, the most well known is the Irvine site (CA-ORA-64), which has occupation levels dating between circa 6000 to 4000 B.C.

During the Milling Stone period and Encinitas Tradition, stone chopping, scraping, and cutting tools were abundant, and generally made from locally available raw material. Projectile points, which are rather large and generally leaf-shaped, and bone tools such as awls were generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare as well. Evidence of weaving or basketry is present at a few sites. The presence of numerous scraper-planes in Milling Stone sites have been attributed to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling Stone period, but are not common.

Two types of artifacts that are considered diagnostic of the Milling Stone period are the cogged stone and the discoidal, most of which have been found within sites dating between 4000 to 1000 B.C. The cogged stone is a ground stone object that has gear-like teeth on the perimeter and is produced from a variety of materials. The function of cogged stones is unknown, but they have been attributed ritualistic or ceremonial uses by several scholars. Similar to cogged stones, discoidals are found in the archaeological record subsequent to the introduction of the cogged stone. Cogged stones and discoidals were often purposefully buried or “cached.” They are most common in sites along the coastal drainages from southern Ventura County southward and are particularly abundant at some Orange County sites, although a few specimens have been found inland at Cajon Pass. Discoidals and cogged stones have been found together at some Orange County sites, such as CA-ORA-83/86/144, CA-ORA-950, and Los Cerritos Ranch.

It has been suggested that Milling Stone period sites reflect migratory settlement patterns of hunters and gatherers who used marine resources during the winter and inland resources the remainder of the year. More recent research indicates that residential bases or camps were moved to resources in a seasonal round, or that some sites were occupied year-round with portions of the village population leaving at certain times of the year to exploit available resources. Regardless of settlement system, it is clear that subsistence strategies during the Milling Stone period included hunting small and large terrestrial mammals, marine mammals, and birds; collecting shellfish and

other shore species; extensive use of seed and plant products; the processing of yucca and agave; and near-shore fishing with barbs or gorges. As evidenced by the abundant milling equipment found at these sites throughout the region, the processing of small seeds was an important component of their subsistence practices.

Characteristic mortuary practices during the Milling Stone period or Encinitas Tradition include extended and loosely flexed burials interred beneath cobble or milling stone cairns. Some burials contain red ochre and few grave goods, such as shell beads and milling stones. “Killed” milling stones, exhibiting holes, may occur in the cairns. Secondary burials are common in the Los Angeles County area, while flexed burials oriented along a north-south axis are common in Orange and San Diego counties. Evidence of wattle-and-daub structures and walls have been identified at some sites in the San Joaquin Hills and Newport Coast area spanning all cultural periods.

A potentially unique trait of the Milling Stone period, isolated to a small region of coastal Orange County, is the presence of a rudimentary ceramic industry involving the creation of fired clay effigies, figurines, and small, crude, thick-walled pottery vessels. The figurines have been found at the Irvine site (CA-ORA-64) on Newport Bay, and a collapsed rockshelter site (CA-ORA-1405-B) within Muddy Canyon.

### **Intermediate Period (ca. 3000/1000 B.C.–A.D. 500/650)**

This era is characterized by a shift toward a hunting and maritime subsistence strategy along with a wider use of plant foods. During the Intermediate period, there was a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and marine mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks became part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common in deposits dating to this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Gypsum Cave and Elko series points, which have a wide distribution in the Great Basin and Mojave deserts between circa 2000 B.C. and A.D. 500 are considered to be diagnostic of this period. Bone tools, including awls, were more numerous than in the preceding period, and the use of asphaltum adhesive was common as well.

Mortars and pestles became more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to have entered the toolkit at this time. This shift appears to be a correlate of a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn. It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory and continuing to European contact.

Characteristic mortuary practices during the Intermediate period include fully flexed burials placed face down or face up and oriented toward the north or west. Red ochre is common, and abalone shell dishes infrequent. Interments sometimes occur beneath cairns or broken artifacts. Shell, bone, and stone ornaments, including charmstones, were more common than in the preceding Encinitas Tradition. Some later sites include olive shell and steatite beads, mortars with flat bases and flaring

sides, and a few small points. The broad distribution of steatite from the Channel Islands and obsidian from distant inland regions, among other items, attest to the growth of trade, particularly during the later part of this period.

### **Late Prehistoric Period (ca. A.D. 500/650–A.D. 1769)**

During the Late Prehistoric period, there was an increase in the use of plant food resources in addition to an increase in land and marine mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during this period, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. In Orange County, Cottonwood series triangular projectile points in particular are diagnostic of this period. Other items include steatite cooking vessels and containers, the increased presence of smaller bone and shell circular fishhooks, perforated stones, arrow shaft straighteners made of steatite, a variety of bone tools, and personal ornaments made from shell, bone, and stone. There is also an increased use of asphaltum for waterproofing and as an adhesive.

Late Prehistoric period sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole venus clam and drilled abalone. Steatite effigies become more common, with scallop shell rattles common in middens. In Orange County for example, scallop shell rattles are concentrated in the Late Prehistoric midden at CAORA-119A, and other time-sensitive artifacts, including abalone ornaments and drilled venus clam shells are present. Much of the rock art found today in the Chumash sphere is thought to date to this period. Mortuary customs were elaborate, including cremation and interment, with abundant grave goods.

By A.D. 1000, fired clay smoking pipes and ceramic vessels began to appear at some sites. The scarcity of pottery in coastal and near-coastal sites implies ceramic technology was not well developed in that area, or that ceramics were obtained by trade with neighboring groups to the south and east. The lack of widespread pottery manufacture is usually attributed to the high quality of tightly woven and watertight basketry that functioned in the same capacity as ceramic vessels.

Another feature typical of Late Prehistoric period occupation is an increase in the frequency of obsidian imported from the Obsidian Butte source in Imperial County. Obsidian Butte was initially exploited ca. A.D. 1000 after its exposure by the receding waters of Holocene Lake Cahuilla. A Late Prehistoric period component of the Elsinore site (CA-RIV-2798-A) produced two flakes that originated from Obsidian Butte. Although about 16 percent of the debitage at the Peppertree site (CA-RIV-463) at Perris Reservoir is obsidian, no sourcing study was done. The site contains a late Intermediate to Late Prehistoric period component and it is assumed that most of the obsidian originated from Obsidian Butte. In the earlier Milling Stone and Intermediate periods, most of the obsidian found at sites within Orange County and many inland areas came from northern sources, primarily the Coso volcanic field. This also appears to be the case within Prado Basin and other interior areas that have yielded obsidian. The presence of Grimes Canyon (Ventura County) fused shale at southern California archaeological sites is also thought to be typical of the Late Prehistoric period. During this period, there was an increase in population size accompanied by the advent of larger, more permanent villages. Large populations and, in places, high population densities, are characteristic, with some coastal and near-coastal settlements containing as many as 1,500 people.

Many of the larger settlements were permanent villages where people resided year-round. The populations of these villages may have also increased seasonally.

In Los Angeles, Orange, and western Riverside counties, introduction of cremation, pottery, and small triangular arrow points are thought to have resulted from Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the “Shoshonean wedge” or “Shoshonean intrusion”. This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer employed in order to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages. Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered to be the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

## **ETHNOGRAPHIC OVERVIEW**

The project area is in a region historically occupied by the Gabrielino. The archaeological record indicates that the Gabrielino arrived in the Los Angeles Basin around 500 B.C. The name “Gabrielino” denotes those people who were administered by the Spanish from the San Gabriel Mission, which included people from the Gabrielino area proper as well as other social groups. Therefore, in the post-Contact period, the name does not necessarily identify a specific ethnic or tribal group. The names by which Native Americans in southern California identified themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and adjacent areas and use the native term Tongva to describe themselves. This term is used herein to refer to the pre-contact inhabitants of the Los Angeles Basin and their descendents. Surrounding native groups included the Chumash and Tataviam to the northwest, the Serrano and Cahuilla to the northeast, and the Juaneño and Luiseño to the southeast.

Tongva lands encompassed the greater Los Angeles Basin and three Channel Islands: San Clemente, San Nicolas, and Santa Catalina. The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000, but recent ethnohistoric work suggests a number approaching 10,000. Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people. Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages. Archaeological sites composed of villages with various-sized structures have been identified.

The Gabrielino village of Puvunga (various spellings) is believed to have been located at Rancho Los Alamitos, possibly at present day Bixby Hill. This places the village across the San Gabriel River and Alamitos Bay from the project area. Puvunga is reported to be the birthplace of Chinigchinich and a ritual center for the Gabrielino. The reported Gabrielino settlement of Motuuchey near the present location of the Naval Weapon Station (NWS) Seal Beach, approximately one mile southeast of the project area has also been described.

The Tongva subsistence economy was centered on gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like that of most native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, cactus, yucca, sages, and agave). Freshwater and saltwater fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed.

A wide variety of tools and implements were used by the Tongva to gather and collect food resources. These included the bow and arrow, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Groups residing near the ocean used oceangoing plank canoes and tule balsa canoes for fishing, travel, and trade between the mainland and the Channel Islands. Tongva people processed food with a variety of tools, including hammer stones and anvils, mortars and pestles, manos and metates, strainers, leaching baskets and bowls, knives, bone saws, and wooden drying racks. Food was consumed from a variety of vessels. Catalina Island steatite was used to make ollas and cooking vessels.

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich culture, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven, where he rewarded the faithful and punished those who disobeyed his laws. The Chinigchinich religion seems to have been relatively new when the Spanish arrived. It was spreading south into the Southern Takic groups even as Christian missions were being built and may represent a mixture of native and Christian belief and practices.

Deceased Tongva were either buried or cremated, with inhumation more common on the Channel Islands and the neighboring mainland coast and cremation predominating on the remainder of the coast and in the interior. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes, as well as scattered among broken ground stone implements. Archaeological data such as these correspond with ethnographic descriptions of an elaborate mourning ceremony that included a wide variety of offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. At the behest of the Spanish missionaries, cremation essentially ceased during the post-Contact period.

## **HISTORIC OVERVIEW**

In the mid-nineteenth century, German immigrants referred to as German Burghers purchased a 1,165-acre parcel of land from Rancho Los Alamitos. They called this land Anaheim, meaning “home by the [Santa Ana] river.” The first port they established at Alamitos Bay was destroyed by flooding from the San Gabriel River in 1867. It was imperative that a new port be established in order for ships to supply the Germans with building materials and to distribute the wine, wool, produce, and other goods that they produced. Soon after the flood, the Germans established a new port to the southeast in present day Seal Beach called Anaheim Landing and Bay. Here they were able to exchange goods with the large ships that came down from San Francisco and anchored out at sea, and bring back much needed supplies, such as lumber, to the Landing. Wagon trains would also come through the area to exchange with the ships. Families often came along on these wagon trips to escape the heat and enjoy the bay. No stores were located near the Landing at this time, so

water had to be brought in from the San Gabriel River. Still, the beach continued to attract families with young children.

When the Southern Pacific Railroad (SPRR) was routed through the area in 1875, the popularity of shipping began to fade. Farmers could now send their goods across the land on rail. The old shipping warehouse was converted into a pavilion for summer vacationers who enjoyed basking on the beach, swimming in the bay, and rowing out to the estuary behind the Landing to dig up clams. Eventually, the area surrounding Anaheim Landing became known as Bay City. An 1896 U.S. Geological Survey (USGS) Las Bolsas quadrangle shows a group of approximately 20 buildings organized into two lines around Anaheim Landing, and depicts the vast reaches of the salt marsh and estuaries into land that is now Naval Weapons Station Seal Beach.

In 1901 Phillip Stanton (also known as “the father of Seal Beach”) purchased a large portion of land from Hellman Ranch, and a smaller portion from Bixby Ranch. He soon sold one of his plots to John C. Ord, a Los Alamitos business man who decided to move his general store to an area that is now the southwest corner of Main Street and Electric Avenue in Seal Beach. Ord became the first permanent resident of Bay City. In 1904, the Big Red Cars of the Pacific Electric Railway arrived in Bay City. A year later, the track would be connected to the Long Beach line when a trestle was constructed across the mouth of Alamitos Bay. This eastern extension was a direct route to Alamitos Bay, Bay City, Anaheim Landing, Huntington Beach, and finally Newport Beach. With the Big Red Cars came more visitors and a growing interest in real estate.

In 1915, Bay City was formally incorporated, at which time its name was changed to Seal Beach. It was Stanton’s aim to turn Seal Beach into “the Coney Island of the Pacific.” A year later, the beachside Joy Zone amusement park was opened along the pier. The original pier from 1906 was widened and reinforced to accommodate the droves of people that showed up every week. The Joy Zone included a wooden rollercoaster called the Derby, the Jewel City Café, ballroom dancing, a bowling alley, and other boardwalk entertainment. Between 1916 and 1930, additional Pacific Electric Red Car lines were added to accommodate the thousands of visitors that came to the Joy Zone every weekend. In the 1920s, oil drilling had become a major focus for Seal Beach and its surrounding areas. The Seal Beach Oil Field (SBOF) was discovered in 1924 when the “Bryant” well was drilled by Shell Oil Company. The SBOF is located between the Long Beach and Huntington Beach Oil Fields, approximately 0.5 mile inland.

Drilling and oil field development continued through the mid-1950s when production in the area began to decline. Offshore oil production began in 1954 in the Belmont Oil Field, located approximately one mile south of the City of Seal Beach on State Leases PRC 186 and 3095.1. Drilling was initiated by the Monterey Oil Company from the first human-made, rock-filled drilling station. The extension to parcel 3095.1 was obtained by Standard Oil Company of California (later to become Chevron) in 1964. Esther Island was constructed by Standard Oil Company in 1965. It produced 30.1 million barrels of oil, 15.2 billion cubic feet of gas, and 20.8 million barrels of water before being destroyed by violent storms in 1983. Platform Esther was constructed on top of the remains of Esther Island with the aim of returning certain wells to production while abandoning others. Chevron never returned the platform to production, and subsequently transferred it to Unocal during a more extensive trade in December 1988.

## **GEOLOGY AND PALEONTOLOGY**

According to geologic mapping, the project area is immediately underlain by marine terrace deposits of Pleistocene age (2.6 Ma to 10,000 years BP) and Holocene age (10,000 years BP to Recent) alluvium and colluviums; refer to Figure 3 in [Appendix 11.4](#).

### **Pleistocene Marine Terrace Deposits**

Marine terrace deposits consist of medium to coarse-grained, cross-laminated sandstone and silty sandstone, and are variously tan, orange, gray, white, and greenish tan, with scattered semi-angular to well-rounded pebbles and some small cobbles. They also commonly contain accumulations of gravel lags (often shelly) and pebble-size channel conglomerate with rip-up clasts. Pleistocene terrace sediments were deposited on wave-cut platforms and represent nearshore and beach environments that are similar to those along the southern California coast today. These deposits are typically highly fossiliferous, containing abundant marine mollusks and other marine invertebrates, as well as locally abundant mostly marine vertebrate fossils. These deposits are considered to have high paleontological sensitivity in Orange County.

### **Palos Verdes Sand**

The Pleistocene terrace deposits near the project area are equivalent to the Palos Verdes Sand. The Palos Verdes Sand was deposited nearly 130,000 years ago (middle to late Pleistocene) in a sublittoral environment in warm water that was up to about 90 feet deep. This rock unit was originally identified as the “upper San Pedro series,” but was officially renamed as the Palos Verdes Sand. It consists of a bed of limehardened gravel overlain by a thick layer of fine-grained sand, silty sand, and silt. The Palos Verdes Sand is well known for containing a diverse assemblage of fossils, including terrestrial vertebrates, marine vertebrates, and marine invertebrates in particular. The invertebrate fauna found within this rock unit is shallow water fauna with approximately 250 species, approximately 20 of which are north of their present range by up to 100 miles. The fossils found within the Palos Verdes Sand are often referred to as belonging to the “San Pedro fauna” due to their close association with that rock unit and the fauna within it. Due to its proven potential to yield scientifically significant fossils, Palos Verde Sand is considered to have a high paleontological sensitivity.

### **Holocene Alluvium and Colluvium**

Quaternary alluvium and colluvium of Holocene age consists variously of unconsolidated clay, sand, gravel, and pebbles and is generally deposited as fluvial and alluvial deposits from surrounding higher elevations and local drainages. Although Holocene-aged sediments often contain the remains of modern organisms, they are too young to contain significant paleontological resources. However, paleontologically sensitive marine terrace deposits of Pleistocene age and the Palos Verde Sand may be present at an unknown, but potentially shallow depth beneath these sediments. Quaternary alluvium of Holocene age has been mapped within the north and far south and southwestern portions of the project area. As stated, Holocene alluvium is unlikely to contain fossils and is considered to have no paleontological sensitivity in Orange County.

## CULTURAL RESOURCE RECORDS SEARCH

The *Cultural Resources Study* included a cultural resource records search of the project area and a 0.5-mile radius at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton on May 9, 2011. The SCCIC houses records of the California Historical Resources Information System (CHRIS) for Orange County. The purpose of the literature search was to identify prehistoric or historic archaeological sites previously recorded within the project area. SWCA also reviewed all available historical USGS 7.5- and 15-minute quadrangles.

The *Cultural Resources Study* also requested that the Native American Heritage Commission (NAHC) conduct a search of its Sacred Lands File to determine if cultural resources important to Native Americans have been recorded within the project area on April 29, 2011. The Sacred Lands File search was conducted by NAHC, and indicated that Native American cultural resources were identified within one-half mile of the Area of Potential Effect (APE). The NAHC provided a contact list of 15 Native American individuals or tribal organizations that may have knowledge of cultural resources in or near the project area. A letter was mailed to each of the NAHC-listed contacts on May 4, 2011, requesting information regarding any Native American cultural resources within or immediately adjacent to the project area; refer to [Appendix 11.4](#).

## Results and Findings

### *Previous Studies*

SCCIC staff completed a CHRIS records search on May 9, 2011. The search identified 23 previously conducted cultural resource studies within 0.5 mile of the project area, of which three were partially conducted within the current project area: OR-00481, OR-002033, and Underbink 2005. An additional 10 cultural resource studies were conducted within the Los Alamitos and Seal Beach quadrangles, but are considered unmapable by SCCIC due to insufficient data; refer to [Appendix 11.4](#), for a list of the previous cultural resource studies.

#### OR-00481

An archaeological survey of approximately nine acres was conducted within the project area in 1979. The survey identified a marine shell scatter over the entire project area, as well as numerous remains of historic period structures including: two sets of trolley tracks, a dirt fill ramp from a former bridge abutment, foundations from the former Los Angeles Department of Water and Power steam generation plant, a scatter of historical building materials associated with the demolition of the generation plant, and the residence still present today. This study presented the results of exhaustive historical map research that indicate the project area is not composed of fill, but rather in prehistoric times was a “low bluff overlooking the east end of Los Alamitos Bay.” The survey identified the project area as a “probable location for a prehistoric aboriginal activity area.”

#### OR-02033

An overview study was conducted in 1987, which created a broad research design for known archaeological sites in northern Orange County. No site was identified within the project area.

### Underbrink 2005

In 2005 a conducted a cultural resources study of nearly the entire current project area, including the commercial building located just outside the north-northwest corner of the current project area was conducted. The study included a records search and pedestrian survey. The study noted the presence of the buildings within the study area but did not consider them for California Register of Historical Resources (CRHR) eligibility. Aside from the buildings, the results of the study were negative for cultural resources.

### ***Previously Recorded Resources***

There are no previously recorded cultural resources located within the project area. The SCCIC records search indicates that there are five previously recorded cultural resources located within a 0.5-mile radius of the project area. These include two prehistoric archaeological sites (P-19-000278 and P-30-001473), one historical cultural resource (P-19-186115; also recorded as HRI # 079355), one property listed on the California Points of Historical Interest (Seal Beach Red Car Station, P-30-162293), one property listed on the CRHR, and one property listed on the National Register of Historical Places (NRHP) (Old Seal Beach City Hall, P-30-156069); refer to [Appendix 11.4](#). None of these resources occur within the boundaries of the project area. The closest extant resource to the project area is the Long Beach Marina Stadium, designed and constructed for the 1932 Olympics as a rowing course and located approximately 0.25 mile northwest of the project area.

### ***Native American Scoping***

As part of the *Cultural Resources Study*, letters were sent to the 15 Native American contacts provided by the NAHC. SWCA received responses from three individuals: Anthony Morales of the Gabrielino Tongva Tribal Council, Joyce Perry of the Juaneño Band of Mission Indians Acjachemen Nation, and Alfred Cruz of the Juaneño Band of Mission Indians. The individuals identified the project area as being sensitive and referenced nearby projects such as Hellman Ranch, Naval Weapons Station Seal Beach, and Bolsa Chica. The responders recommended full time archaeological and Native American monitoring during ground disturbance activities.

## **CULTURAL RESOURCES SURVEY**

### **Methods**

SWCA conducted a survey of the project area on May 4, 2011. Intensive-level survey methods consisted of a pedestrian survey in parallel transects spaced no more than 10 meters apart over the entire project area, excluding the occupied residence, which was fenced separately. Transects were modified as necessary due to areas of dense vegetation. SWCA examined the ground surface for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historical debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows, cut banks, and drainages were visually inspected.

SWCA conducted an intensive-level survey of the historic period residence located within the project area on September 21, 2011. The field survey consisted of visual inspection of all features of the property.

## Results

No archaeological resources were observed during the intensive-level survey of the project area. Most of the project area consists of non-native, densely populated grasses and weeds. Ground visibility was approximately five percent in the entire project area. The entire project area appears to have been subjected to repeated brushing over many years and the fairly level grade of the project area reflects the grading associated with the clean-up of the former DWP plant.

One building was identified, recorded, and evaluated as a result of the intensive-level field survey. The building is a single-family residence located in the north-northeast corner of the project area and is associated with an adjacent commercial boat sales business. SWCA recorded the resource on State of California Department of Parks and Recreation (DPR) Series 523 forms and evaluated it for NRHP, CRHR, and local eligibility.

The two-story residence is clad in wood lap siding and was constructed in 1956 by Russell B. Grotemat, a former sea captain who developed the Seal Beach Trailer Park. No subsequent information was discovered regarding any former owners or occupants.

Although the subject building is recognizable to its original appearance, it is an unremarkable example of a reasonably common type (the vernacular), Mid-Century Modern residence. The building is not eligible for listing in NRHP or the CRHR under Criteria A/1 for its associations with events or B/2 for its associations with the important persons and is not eligible Criterion C or 3 for its architecture. No evidence was discovered to warrant consideration under Criterion D/4. The property is not eligible as a contributor to a larger historic district, nor is it eligible for local designation.

## PALEONTOLOGICAL RESOURCE RECORDS SEARCH

The *Paleontological Resources Assessment* included a museum records search at the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County (LACM) on May 31, 2011. The purpose of the records search was to determine whether there are any known vertebrate fossil localities in or near the project area. A review of published and unpublished literature and geologic maps was conducted to determine the geology of the project area and its paleontological sensitivity.

## Results and Findings

Museum collections maintained by the LACM contain no recorded vertebrate fossil localities in the project area; however, at least five vertebrate localities have been recorded nearby in the same or similar geologic deposits occurring in the project area. These localities have yielded abundant species of marine vertebrates, including sharks and rays, as well as terrestrial mammals ranging in size from mammoths and ground sloths to pocket gophers. All fossil localities were discovered within older Quaternary deposits (i.e., Pleistocene-age deposits); refer to [Appendix 11.4](#) for a list of previously recorded vertebrate fossil localities near the project area.

## 5.4.2 REGULATORY SETTING

Numerous laws and regulations require Federal, State, and local agencies to consider the effects a project may have on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies (i.e., State Historic Preservation Office and the Advisory Council on Historic Preservation). The National Historic Preservation Act (NHPA) of 1966, as amended, the California Environmental Quality Act (CEQA), and the California Register of Historical Resources, Public Resources Code (PRC) 5024, are the primary Federal and State laws governing and affecting preservation of cultural resources of national, State, regional, and local significance. The applicable regulations are discussed below.

### FEDERAL

#### National Historic Preservation Act of 1966

Enacted in 1966 and amended in 2000, the National Historic Preservation Act (NHPA) declared a national policy of historic preservation and instituted a multifaceted program, administered by the Secretary of the Interior, to encourage the achievement of preservation goals at the Federal, State and local levels. The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP or National Register), established the position of State Historic Preservation Officer (SHPO) and provided for the designation of State Review Boards, set up a mechanism to certify local governments to carry out the purposes of the NHPA, assisted Native American tribes to preserve their cultural heritage and created the Advisory Council on Historic Preservation (ACHP).

#### *Section 106 Process*

Through regulations associated with the NHPA, an impact to a cultural resource would be considered significant if government action will affect a resource listed in or eligible for listing in the National Register. The NHPA codifies a list of cultural resources found to be significant within the context of national history, as determined by a technical process of evaluation. Resources that have not yet been placed on the National Register, and are yet to be evaluated, are afforded protection under the Act until shown to be not significant.

Section 106 of the NHPA and its implementing regulations (36 Code of Federal Regulations Part 800) note that for a cultural resource to be determined eligible for listing in the National Register, the resource must meet specific criteria associated with historic significance and possess certain levels of integrity of form, location, and setting. The criteria for listing on the National Register are applied within an analysis when there is some question as to the significance of a cultural resource. The criteria for evaluation are defined as the quality of significance in American history, architecture, archeology, engineering, and culture. This quality must be present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

- Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history; or

- Criterion B: It is associated with the lives of persons significant in our past; or
- Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history.

Criterion (D) is usually reserved for archaeological resources. Eligible cultural resources must meet at least one of the above criteria and exhibit integrity, measured by the degree to which the resource retains its historical properties and conveys its historical character.

The Section 106 evaluation process does not apply to projects undertaken under City environmental compliance jurisdiction, however, should the undertaking require funding, permits or other administrative actions issued or overseen by a federal agency, analysis of potential impacts to cultural resources following the Section 106 process will likely be necessary. The Section 106 process typically excludes cultural resources created less than 50 years ago unless the resource is considered highly significant from the local perspective. Finally, the Section 106 process allows local concerns to be voiced and the Section 106 process must consider aspects of local significance before a significance judgment is rendered.

## **Secretary of the Interior's Standards for the Treatment of Historic Properties**

Evolving from the *Secretary of the Interior's Standards for Historic Preservation Projects with Guidelines for Applying the Standards* that were developed in 1976, the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* were published in 1995 and codified as 36 CFR 67. Neither technical nor prescriptive, these standards are "intended to promote responsible preservation practices that help protect our Nation's irreplaceable cultural resources." "Preservation" acknowledges a resource as a document of its history over time, and emphasizes stabilization, maintenance, and repair of existing historic fabric. "Rehabilitation" not only incorporates the retention of features that convey historic character but also accommodates alterations and additions to facilitate continuing or new uses. "Restoration" involves the retention and replacement of features from a specific period of significance. "Reconstruction," the least used treatment, provides a basis for recreating a missing resource. These standards have been adopted, or are used informally, by many agencies at all levels of government to review projects that affect historic resources.

## **STATE LEVEL**

### **California Environmental Quality Act**

As defined in Section 21083.2 of CEQA, a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the State *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the State *CEQA Guidelines*, then the site is to be treated in accordance with the provisions of CEQA Section 21083, which is unique archaeological resource. The State *CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (State *CEQA Guidelines* Section 15-64.5(c)(4)).

## California Register of Historical Resources

Created in 1992 and implemented in 1998, the California Register of Historical Resources (CRHR) is “an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.” Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- Criterion 2: It is associated with the lives of persons important in our past.
- Criterion 3: It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Criterion 4: It has yielded, or may be likely to yield, information important in history or prehistory.

## LOCAL LEVEL

### City of Seal Beach General Plan

City policies pertaining to cultural resources are contained in the Cultural Resources Element of the Seal Beach General Plan. The Cultural Resources Element describes methods for protecting archaeological and historical resources, and provides local policies to guide the implementation of cultural resource preservation, beyond the protections afforded by applicable federal, state, and local laws. These policies include, but are not limited to, the following:

- Balance the benefits of development with the project's potential impacts to existing cultural resources. (Policy 1)
- Identify, designate, and protect sites and buildings of historic importance. (Policy 2)
- Coordinate cultural resource programs and development project review with affected resource agencies and Native American representatives. (Policy 3)
- Assess development proposals for potential impacts to significant archaeological resources pursuant Section 15064.5 of the California Environmental Quality Act (CEQA). Require a study conducted by a professional archaeologist for all development proposals located in areas known to be sensitive for cultural resources. (Policy 5)

### 5.4.3 IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

The purpose of this analysis is to identify any potential cultural resources within or adjacent to the project site, and to assist the Lead Agency in determining whether such resources meet the official definitions of “historical resources,” as provided in the Public Resource Code, in particular CEQA.

## SIGNIFICANCE GUIDELINES

### Historical Resources

Impacts to a significant cultural resource that affect characteristics that would qualify it for the NRHP or that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. These impacts could result from “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (*CEQA Guidelines*, Section 15064.5 [b][1], 2000). Material impairment is defined as demolition or alteration “in an adverse manner [of] those characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register” (*CEQA Guidelines* Section 15064.5[b][2][A]).

## Archaeological Resources

A significant prehistoric archaeological impact will occur if grading and construction activities will result in a substantial adverse change to archaeological resources determined to be “unique” or “historic.” “Unique” resources are defined in Public Resources Code Section 21083.2; “historic” resources are defined in Public Resources Code Section 21084.1 and *CEQA Guidelines* Section 15126.4.

Public Resources Code Section 21083.2(g) states:

*As used in this section, “unique archaeological resource” means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:*

- 1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;*
- 2. Has a special and particular quality, such as being the oldest of its type or the best available example of its type; or*
- 3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.*

## Paleontological Resources

An impact on paleontological materials would be considered a significant impact if the project results in the direct or indirect destruction of a unique or important paleontological resource or site. The following criteria are used to determine whether a resource is unique or important:

- The past record of fossil recovery from the geologic unit(s);
- The recorded fossil localities in the project site;
- Observation of fossil material on-site; and
- The type of fossil materials previously recovered from the geologic unit (vertebrate, invertebrate, etc.).

## CEQA SIGNIFICANCE CRITERIA

Appendix G of the *CEQA Guidelines* contains the Initial Study Environmental Checklist form, which includes questions relating to cultural resources. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant adverse environmental impact if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5 (refer to Impact Statement CUL-1);
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5 (refer to Impact Statement CUL-2);

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (refer to Impact Statement CUL-3); and/or
- Disturb any human remains, including those interred outside of formal cemeteries (refer to Impact Statement CUL-4).

Based on these standards/criteria, the effects of the proposed project have been categorized as either a “less than significant impact” or a “potentially significant impact.” If a potentially significant impact cannot be reduced to a less than significant level through the application of goals, policies, standards or mitigation, it is categorized as a significant and unavoidable impact. The standards used to evaluate the significance of impacts are often qualitative rather than quantitative because appropriate quantitative standards are either not available for many types of impacts or are not applicable for some types of projects.

## 5.4.4 IMPACTS AND MITIGATION MEASURES

### HISTORICAL RESOURCES

#### **CUL-1 THE PROPOSED PROJECT WOULD NOT CAUSE A SIGNIFICANT IMPACT TO A HISTORICAL RESOURCE.**

**Impact Analysis:** The project site is vacant, with the exception of a residential structure located within the northwestern portion of the project site. The residential structure would be removed as part of the proposed project. As stated, the residential structure is not eligible for listing in NRHP or the CRHR under Criteria A/1 for its associations with events or B/2 for its associations with important persons, and is not eligible Criterion C/3 for its architecture. No evidence was discovered to warrant consideration under Criterion D/4. The property is not eligible as a contributor to a larger historic district, nor is it eligible for local designation. Thus, implementation of the proposed project would not cause a significant impact to a historic resource. Impacts would be less than significant and no mitigation measures would be required.

**Mitigation Measures:** No mitigation measures are required.

**Level of Significance:** Less Than Significant Impact.

### ARCHAEOLOGICAL RESOURCES

#### **CUL-2 THE PROPOSED PROJECT MAY CAUSE A SIGNIFICANT IMPACT TO UNKNOWN ARCHAEOLOGICAL RESOURCES THAT COULD OCCUR ON-SITE.**

**Impact Analysis:** As stated above, three previous cultural resources studies have been conducted which included portions of the project area. Although there are no previously recorded cultural resources located within the project area, there are previously recorded cultural resources located within a 0.5-mile radius of the project area. Further, the Native American scoping indicated the project area is highly sensitive for cultural resources important to Native Americans. However, no archaeological resources were observed during the intensive-level survey of the project area.

The project would allow for the development of a 48-lot residential development located on approximately 4.5 acres in the northern portion of the project site and open space/passive recreation uses on the remaining approximately 6.4 acres of the project site. As proposed, the project would involve finished pads and all infrastructure necessary to serve the new residential development. The residential units would be developed individually by homeowners as custom homes. Although there are no known archaeological resources occurring at the project site, the proposed project does have the potential to impact previously unrecorded cultural resources during ground disturbances.

An archaeologist and a Native American Monitor appointed by the City of Seal Beach would be required to be present during earth removal or disturbance activities related to rough grading and other excavation for utilities (Mitigation Measure CUL-1). If any earth removal or disturbance activities result in the discovery of cultural resources, the contractor(s) would cease all earth removal or disturbance activities in the vicinity and immediately notify the City selected archaeologist and/or Native American Monitor, who would immediately notify the Director of Development Services. The City selected archaeologist would then evaluate all potential cultural findings in accordance with standard practice, the requirements of the City of Seal Beach Cultural Resources Element, and other applicable regulations. Consultation with the Native American Monitor, the Native American Heritage Commission, and data/artifact recovery, if deemed appropriate, would also be conducted. With implementation of Mitigation Measure CUL-1, project implementation would not cause a substantial adverse change in the significance of an archaeological resource.

***Mitigation Measures:***

CUL-1 An archaeologist and a Native American Monitor appointed by the City of Seal Beach shall be present during earth removal or disturbance activities related to rough grading and other excavation for utilities. If any earth removal or disturbance activities result in the discovery of cultural resources, the Project proponent's contractors shall cease all earth removal or disturbance activities in the vicinity and immediately notify the City selected archaeologist and/or Native American Monitor, who shall immediately notify the Director of Development Services. The City selected archaeologist shall evaluate all potential cultural findings in accordance with standard practice, the requirements of the City of Seal Beach Cultural Resources Element, and other applicable regulations. Consultation with the Native American Monitor, the Native American Heritage Commission, and data/artifact recovery, if deemed appropriate, shall be conducted.

***Level of Significance:*** Less Than Significant With Mitigation Incorporated.

## **PALEONTOLOGICAL RESOURCES**

**CUL-3 THE PROPOSED PROJECT MAY CAUSE A SIGNIFICANT IMPACT TO UNKNOWN PALEONTOLOGICAL RESOURCES THAT COULD OCCUR ON-SITE.**

***Impact Analysis:*** Although no recorded vertebrate fossil localities occur within the project area, at least five vertebrate localities have been recorded nearby in the same or similar geologic deposits that occur in the project area. All fossil localities were discovered within older Quaternary deposits (i.e., Pleistocene-age deposits). The project site is, in part, underlain by geologic deposits determined to

have a high paleontological sensitivity. Thus, any project-related ground disturbance (mass grading, excavation, and/or trenching) within Pleistocene marine terrace deposits or the Palos Verdes Sand could result in significant adverse impacts to paleontological resources unless mitigated.

Ground disturbances in topsoil or Holocene alluvium and colluviums would not require full-time monitoring, as these sediments are not determined to have a paleontological sensitivity. However, an Orange County Certified Paleontologist appointed by the City of Seal Beach would be required to be present during earth removal or disturbance activities related to rough grading and other excavation for utilities occurring within paleontological sensitive Pleistocene marine terrace deposits or Palos Verdes Sand (Mitigation Measure CUL-2). If any earth removal or disturbance activities result in the discovery of paleontological resources, the contractor(s) would cease all earth removal or disturbance activities in the vicinity and immediately notify the City selected paleontologist, who would immediately notify the Director of Development Services. The City selected paleontologist would then evaluate all potential paleontological findings in accordance with standard practice, the requirements of the City of Seal Beach Cultural Resources Element, and other applicable regulations. The paleontologist would prepare a Final Monitoring and Mitigation Report, documenting the results of the mitigation and monitoring program and itemizing the fossils collected. With implementation of Mitigation Measure CUL-2, potential adverse impacts to paleontological resources would be reduced to a less than significant level.

***Mitigation Measures:***

CUL-2 An Orange County Certified Paleontologist appointed by the City of Seal Beach shall prepare a Paleontological Resource Monitoring and Mitigation Program prior to earth removal or disturbance activities at the project site. The City selected paleontologist shall be present during earth removal or disturbance activities related to rough grading and other excavation for utilities. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. If any earth removal or disturbance activities result in the discovery of paleontological resources, the Project proponent's contractors shall cease all earth removal or disturbance activities in the vicinity and immediately notify the City selected paleontologist who shall immediately notify the Director of Development Services. The City selected paleontologist shall evaluate all potential paleontological findings in accordance with the Paleontological Resource Monitoring and Mitigation Program Monitoring, standard practice, the requirements of the City of Seal Beach Cultural Resources Element, and other applicable regulations. Upon completion of the fieldwork, the City selected paleontologist shall prepare a Final Monitoring and Mitigation Report to be filed with the City and the repository to include, but not be limited to, a discussion of the results of the mitigation and monitoring program, an evaluation and analysis of the fossils collected (including an assessment of their significance, age, geologic context), an itemized inventory of fossils collected, a confidential appendix of locality and specimen data with locality maps and photographs, and an appendix of curation agreements and other appropriate communications.

***Level of Significance:*** Less Than Significant With Mitigation Incorporated.

## BURIAL SITES

### **CUL-4 THE PROPOSED PROJECT MAY CAUSE A SIGNIFICANT IMPACT TO UNKNOWN NATIVE AMERICAN BURIAL SITES THAT COULD OCCUR ON-SITE.**

**Impact Analysis:** As stated, the Native American scoping indicated the project area is highly sensitive for cultural resources important to Native Americans. Although there are no known Native American burial sites occurring at the project site, the proposed project does have the potential to impact previously unrecorded human remains during ground disturbances.

Should any human bone be encountered during any earth removal or disturbance activities, all activity shall cease immediately and the City selected archaeologist and Native American monitor shall be immediately contacted, who shall then immediately notify the Director of Development Services (Mitigation Measure CUL-3). The Director of Development Services shall contact the Coroner pursuant to Sections 5097.98 and 5097.99 of the Public Resources Code relative to Native American remains. Should the Coroner determine the human remains to be Native American, the Native American Heritage Commission shall be contacted pursuant to Public Resources Code Section 5097.98.

Also, if more than one Native American burial is encountered during any earth removal or disturbance activities, a “Mitigation Plan” would be required to be prepared and subject to approval by the City of Seal Beach Development Services Department (Mitigation Measure CUL-4). The Mitigation Plan would include the following procedures:

- Continued Native American Monitoring;
- Notification Procedures for New Discoveries;
- Identification of Additional Burials;
- Burial Removal and Storage;
- Study of Burial Remains;
- Repatriation of Burials and Associated Artifacts;
- Additional Studies;
- Curation; and
- Preparation of Final Report.

Upon implementation of the recommended Mitigation Measures CUL-3 and CUL-4, potential impacts resulting from the alteration of human remains would be reduced to less than significant levels.

#### ***Mitigation Measures:***

CUL-3 Should any human bone be encountered during any earth removal or disturbance activities, all activity shall cease immediately and the City selected archaeologist and Native American monitor shall be immediately contacted, who shall then immediately notify the Director of Development Services. The Director of Development Services shall contact the Coroner pursuant to Sections 5097.98 and 5097.99 of the Public Resources Code relative to Native American remains. Should the Coroner determine the

human remains to be Native American, the Native American Heritage Commission shall be contacted pursuant to Public Resources Code Section 5097.98.

- CUL-4 If more than one Native American burial is encountered during any earth removal or disturbance activities, a “Mitigation Plan” shall be prepared and subject to approval by the City of Seal Beach Development Services Department. The Mitigation Plan shall include the following procedures:

Continued Native American Monitoring

- All ground disturbance in any portions of the project area with the potential to contain human remains or other cultural material shall be monitored by a Native American representative of the Most Likely Descendant (MLD). Activities to be monitored shall include rough grading and grading of previously undisturbed deposit, with the exception of contexts that are clearly within undisturbed soil profiles.
- Exposure and removal of each burial shall be monitored by a Native American. Where burials are clustered and immediately adjacent, one monitor is sufficient for excavation of two adjoining burials.
- Excavation of test units shall be monitored. Simultaneous excavation of two test units if less than 20 feet apart may be monitored by a single Native American.
- If screening of soil associated with burials or test units is done concurrently with and adjacent to the burial or test unit, the Native American responsible for that burial or test unit will also monitor the screening. If the screening is done at another location, a separate monitor shall be required.
- All mechanical excavation conducted in deposits that may contain human remains (i.e., all areas not completely within undisturbed soil profiles) shall be monitored by a Native American.

Notification Procedures for New Discoveries

- When possible burials are identified during monitoring of mechanical excavation, or excavation of test units, the excavation shall be temporarily halted while the find is assessed in consultation with the lead field archaeologist. If the find is made during mechanical excavation, the archaeologist or Native American monitoring the activity shall have the authority to direct the equipment operator to stop while the find is assessed. If it is determined that the find does not constitute a burial, the mechanical excavation shall continue.
- If the find is determined to be a human burial, the lead archaeologist shall immediately notify the Site Supervisor for the developer, as well as the Principal Investigator. The Principal Investigator shall immediately notify the MLD and the Director of Development Services for the City of Seal Beach.

### Identification of Additional Burials

- For all discovered human burials, attempts shall continue to be made to locate additional burials nearby through hand excavation techniques. This shall be done through the excavation of 1 x 1 meter exploratory test units (ETUs) placed along transects extending radially from each identified burial or burial cluster. The spacing of the ETUs shall be determined upon consultation with the Project Archaeologist and the MLD. The radial transects shall be designed to test areas within 50 feet (15 meters) from the edge of each burial or burial cluster. Excavation of these units shall be limited to areas containing intact cultural deposit (i.e., areas that have not been graded to the underlying undisturbed soil profiles) and shall be excavated until the undisturbed soil profiles are encountered, or to the excavation depth required for the approved grading plan. The soil from the ETUs along the radial transects shall be screened only if human remains are found in that unit.
- Controlled grading shall be conducted within these 50-foot heightened investigation areas with a wheeled motor grader. The motor grader shall use an angled blade that excavates 1 to 2 inches at a pass, pushing the soil to the side to form a low windrow. Monitors shall follow about 20 feet behind the motor grader, examining the ground for evidence of burials.
- When a burial is identified during controlled grading, the soil in windrows that may contain fragments of bone from that burial shall be screened. At a minimum this shall include the soil in the windrow within 50 feet of the burial in the direction of the grading.
- If additional burials are found during controlled grading, additional ETUs will be hand excavated in the radial patterns described above.

### Burial Removal and Storage

- Consultation with the MLD shall occur regarding the treatment of discovered human burials. If the MLD determines it is appropriate to have discovered human remains pedestaled for removal, that activity shall be conducted in a method agreed to by the MLD.
- After pedestaling or other agreed upon burial removal program is completed, the top of a burial shall be covered with paper towels to act as a cushion, and then a heavy ply plastic will be placed over the top to retain surface moisture. Duct tape shall be wrapped around the entire pedestal, securing the plastic bag and supporting the pedestal. Labels shall be placed on the plastic indicating the burial number and the direction of true north in relation to the individual burial. Sections of rebar shall be hammered across the bottom of the pedestal and parallel to the ground. When a number of parallel rebar sections have been placed this way, they shall be lifted simultaneously, cracking the pedestal loose from the ground. The pedestal shall then be pushed onto a thick plywood board and lifted onto a pallet. A forklift shall carry the pallet to a secure storage area or secure storage containers located on the subject property.

- If another agreed upon burial removal program is utilized, that method shall be carried out in a manner agreed upon after consultation with the MLD and concurrence by the Director of Development Services.

#### Study of Burial Remains

- If the burials are removed in pedestal and are incompletely exposed, osteological studies are necessarily limited to determination (if possible) of age, sex, position, orientation, and trauma or pathology. After consultation, and only upon written agreement by the MLD, additional studies that are destructive to the remains may be undertaken, including radiocarbon dating of bone or DNA studies. If the MLD determines that only non-destructive additional studies may be allowed, one shell may be removed from each burial and submitted for radiocarbon dating. The assumption here is that the shell would have been part of the fill for the burial pit, and therefore would provide a maximum age for the burial.
- The MLD may indicate a willingness to consider some additional exposure and study of the skeletal material removed from the sites. Such study would not involve removal of the remains from the project area, but rather would be undertaken near the storage area. To the extent allowed by the MLD, the bones would be further exposed within the existing pedestals or other medium containing the human remains and additional measurements taken. Consultation with the MLD regarding the feasibility of these additional studies prior to reburial would occur.

#### Repatriation of Burials and Associated Artifacts

- Once all portions of the project area have been graded to the underlying culturally sterile marine terrace deposits, or to the excavation depth required for the approved grading plan, the repatriation process shall be initiated for all recovered human remains and associated artifacts. Once a reburial site has been identified and prepared, the remains and associated artifacts shall be transported from the secure storage area to the site for reburial. Appropriate ceremony will be undertaken during this process at the discretion of the MLD.

#### Additional Studies

Considerable additional data relating to regional research issues may be uncovered if substantial numbers of human burials and other archaeological features are encountered during the construction monitoring for the development. If this occurs, additional analysis shall be conducted. The analysis shall be designed to more completely address the research issues discussed in the approved "Research Design," and to provide additional mitigation of impacts to the sites in light of the new finds. The following studies would be potentially applicable:

- Radiocarbon Dating. In considering the implications of the burials in interpreting site use and regional settlement, it is critical to assess the time range represented by the interments. Do they correspond to the full temporal range of site use, or only a limited timeframe? Although direct dating of the bones may not be possible due to

the destructive nature of the radiocarbon technique, the MLD may approve the removal of a single shell from the interior of each burial for dating. Although this shall not provide a direct date of the burial, assuming the shell was part of the burial fill it should provide a maximum age (that is, the burial should not be older than the shell). In addition, an equivalent number of additional samples from non-burial contexts would also be taken for comparative purposes. These data would provide a more secure measure of the intensity of occupation during different periods.

- *Animal Interments.* Animal interments may be discovered within the project area. Because these are not human remains, somewhat more intensive study is possible. Because these features are uncommon and represent very culture-specific religious practices, they are useful in reconstructing cultural areas during certain times in prehistory. Analysis of animal interments will include: (1) exposure to determine burial position; (2) photo documentation; (3) examination of skeleton for age/sex; traumatic injury, pathology, butchering, or other cultural modification; (4) radiocarbon dating; and (5) examination of grave dirt for evidence of grave goods or stomach contents.

#### Curation

Cultural materials recovered from the cultural resources monitoring and mitigation program for the development shall be curated either at an appropriate facility in Orange County, or, in consultation with the City, at the San Diego Archaeological Center.

#### Preparation of Final Report

The final technical report shall be prepared and submitted to the City within 12 months of the completion of the archeological field work. The report shall conform to the guidelines developed by the California Office of Historic Preservation for Archaeological Resource Management Reports (ARMR). It will be prepared in sufficient quantity to distribute to interested regional researchers and Native American groups. It shall thoroughly document and synthesize all of the findings from all phases of the cultural resources program. Funding shall be provided by the landowner.

***Level of Significance:*** Less Than Significant With Mitigation Incorporated.

### 5.4.5 CUMULATIVE IMPACTS

- THE PROPOSED PROJECT, COMBINED WITH OTHER RELATED CUMULATIVE PROJECTS, WOULD NOT CAUSE A SIGNIFICANT IMPACT TO A HISTORICAL RESOURCE.
- THE PROPOSED PROJECT, COMBINED WITH OTHER RELATED CUMULATIVE PROJECTS, MAY CAUSE A SIGNIFICANT IMPACT TO UNKNOWN ARCHAEOLOGICAL RESOURCES THAT COULD OCCUR ON-SITE.

- THE PROPOSED PROJECT, COMBINED WITH OTHER RELATED CUMULATIVE PROJECTS, MAY CAUSE A SIGNIFICANT IMPACT TO UNKNOWN PALEONTOLOGICAL RESOURCES THAT MAY OCCUR ON-SITE.
- THE PROPOSED PROJECT, COMBINED WITH OTHER RELATED CUMULATIVE PROJECTS, MAY CAUSE A SIGNIFICANT IMPACT TO UNKNOWN NATIVE AMERICAN BURIAL SITES THAT COULD OCCUR ON-SITE.

**Impact Analysis:** Table 4-1, *Cumulative Projects List*, and Exhibit 4-1, *Cumulative Project Locations*, identify the related projects and other possible development in the area determined as having the potential to interact with the proposed project to the extent that a significant cumulative effect may occur. The project site does not contain any historical structures, and therefore, the proposed project would not cumulatively contribute to impacts to a historical resource. Due to the location of the cumulative projects and the high sensitivity for cultural resources to occur within the cities of Seal Beach and Long Beach, there is the potential that unknown archeological resources, including burial sites, and paleontological resources could occur at one or more of the cumulative project sites. The potential destruction of unknown archaeological resources associated with ground disturbance activities at the project site and cumulative project sites could be cumulatively considerable, due to the collective loss of historical artifacts and knowledge regarding the culture of the people who lived at the respective sites. Additionally, the destruction of paleontological resources could be cumulatively considerable, as fossils provide biological information of ancient life, which would no longer be available for study. However, individual projects would be evaluated on a project-by-project basis to determine the extent of potential impacts to archeological and paleontological resources. Adherence to State and Federal statutes, as well as project-specific mitigation measures, cumulative impacts to archaeological and paleontological resources would be reduced to less than significant levels. With implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4, the project would not cumulatively contribute to substantial archaeological, including burial sites, and paleontological resource impacts. A less than significant impact would occur in this regard.

**Mitigation Measures:** Refer to Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4.

**Level of Significance:** Less Than Significant With Mitigation Incorporated.

## 5.4.6 SIGNIFICANT UNAVOIDABLE IMPACTS

No unavoidable significant impacts related to cultural resources have been identified following implementation of mitigation measures referenced in this section.

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